REMARKS

In response to the March 27, 2006 Office Action, Applicants respond to the Examiner's detailed action with the following remarks organized according to the Examiner's communication.

Objections

In response to the Examiner's Objection to the amended limitation of Claim 1 as not supported by the specification, Applicant respectfully directs the Examiner's attention to Figures 13, 14, 15, 16, 17, 18, 19, 20, 21, and 22, each of which is a resist image that shows multiple resolved phase zones. One skilled in the art would understand the term "resolvable" as meaning "to render parts of an image visible and distinct," and "resolution" as meaning "the process or capability of making distinguishable the individual parts of closely adjacent optical images." *See, e.g., Merriam-Webster Dictionary*, 2006. Each of the Figures exhibits multiple individually distinguishable phase zones resolved by the optical system. As a result, Applicant respectfully submits that the added limitation to Claim 1 is fully supported by the specification.

In response to the Examiner's Objection to Claim 15, Applicant has corrected the spelling error in amended Claim 15, as shown in the above Listing of Claims.

Claim Rejections – 35 USC §102

In response to the Examiner's rejection of Claims 1, 2, 6 – 10, 13 – 21 under 35 U.S.C. §102(e) as being anticipated by U.S. 2003/0098970 ("Chen"), Applicant respectfully disagrees. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Chen specifically teaches away from optically resolved and independently distinguishable phase zones in his method. As the Examiner noted on page 4 of the Office Action, Claim 1 of Chen teaches multiple **sub-resolution** phase zones "see Fig. 5b, where **12** and **14** <u>are sub-resolution features</u>," [0058], lines 4 – 5. Chen does not

teach multiple phase zones that are resolvable by the optical system. Independent Claim 1 of the present invention includes the limitation of "multiple phase zones are resolvable by the optical system," and Figures 13 through 22 illustrate images of multiple individually distinguishable phase zones resolved by the optical system. The claims are distinctive from Chen because the language "resolvable" indicates that the method claimed includes the capability of distinguishing and imaging the individual parts of closely adjacent optical images, *i.e.*, the phase zones, while Chen specifically teaches a method where the phase zones are intentionally sized and disposed so they are not resolved, and thus are not able to be imaged directly. The claims of the present invention are directed to an invention that has the advantage of solving the quantifying system problem of aberration detection found in the Dirksen monitor structure, whereas Chen requires that the size of each individual feature forming the monitor is sufficiently small such that the individual feature is not imaged on the substrate.

The Applicant respectfully directs the Examiner's attention to Chen's own admission that the phase regions in his invention are not resolvable, as found in the argument submitted by Chen to the Office on October 29, 2003, and herewith enclosed as Exhibit A in the Appendix.

Specifically, Chen himself states that his invention claims a method of detecting lens aberrations that includes:

> Forming a monitor comprising **a plurality of sub-resolution features**, for example, on a mask, which when images, forms a predetermined test pattern on the substrate. This test pattern is then utilized to detect lens aberrations. **The amended claims expressly state that <u>none</u> of the plurality of sub-resolution features are invidivually imaged on said substrate.** Indeed, this is the well known meaning of the term "sub-resolution" (i.e., that by themselves, the size of each individual feature forming the monitor is sufficiently small such that the individual feature is not imaged on the substrate). **<u>In other words, each individual feature is below the resolution capabilities of the imaging device.</u>**

(emphasis added). In his argument, Chen further characterizes his invention as necessitating non-resolvable features in each and every example he presents. As a result, Applicant respectfully asserts that the Examiner may not properly rely on Chen to form

the basis of his rejection where both the Applicant and Chen himself expressly dispute the Examiner's understanding of the reference.

Claim Rejections – 35 USC §103

Responsive to the Examiner's rejection of Claim 3 under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. 2003/0147061 (Omura); Claims 4 and 5 under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. 2003/0203319 (Lee); Claims 11 and 12 under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. 6,839,132 (Fukuhara); and Claim 22 under 35 U.S.C. 103(a) as being unpatentable over Chen in view of U.S. 6,552,776 (Wristers); Applicant respectfully disagrees. To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Claims 3 – 5, 11, 12, and 22 are distinct from the device taught by Chen for the reasons stated above in the section under the heading, "Claim Rejections – 35 USC §102." Omura, Lee, Fukuhara, and Wristers do not overcome these deficiencies, as none of the cited references discloses the Applicant's invention as including resolvable multiple phase zones. Applicant therefore respectfully submits that Claims 3 – 5, 11, 12, and 22 are in condition for allowance.

The remaining art of record has been considered and while analogous does not render obvious the invention as now claimed whether viewed singly or in combination.

Applicants appreciate the opportunity to call the Examiner but believe that this amendment to the claims and the forgoing remarks fully address the issues raised by the Examiner. On the other hand, the Examiner is invited to call the undersigned attorney if he has any matters to address that will facilitate allowance of the application.

Applicants respectfully request favorable consideration and that a timely Notice of Allowance be issued in this case.

In the event that Applicant has overlooked the need for an extension of time, additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefore and authorize that any changes be made to Deposit Account No.: 50-3010.

Respectfully submitted,

HISCOCK & BARCLAY, LLP

By: ______________________

Eleanor M. Hynes
Reg. No. 58,013
Attorney for Applicant
under 37 C.F.R. 1.34
2000 HSBC Plaza
Rochester, NY 14604
Tel: (585) 295-4493
Fax: (585) 295-8452
ehynes@hiscockbarclay.com

APPENDIX

Docket No.: 55071-042 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	Customer Number: 20277
[illegible]. Fung CHEN	Confirmation Number: 6851
Serial No.: 09/729,695	Group Art Unit: 2877
Filed: December 05, 2000	Examiner: Tu T. Nguyen

For: METHOD AND APPARATUS FOR DETECTING ABERRATIONS IN A PROJECTION LENS UTILIZED FOR PROJECTION OPTICS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is an Amendment in the above-identified application.

- ☐ No additional fee is required.
- ☐ Applicant is entitled to small entity status under 37 CFR 1.27
- ☒ Also attached: Petition for Extension of Time

The fee has been calculated as shown below:

	NO. OF CLAIMS	HIGHEST PREVIOUSLY PAID FOR	EXTRA CLAIMS	RATE	FEE
Total Claims	41	41	0	$18.00 =	$0.00
Independent Claims	5	5	0	$86.00 =	$0.00
		Multiple claims newly presented			$0.00
		Fee for extension of time			$420.00
					$0.00
		Total of Above Calculations			$420.00

☒ Please charge my Deposit Account No. 500417 in the amount of $420.00. An additional copy of this transmittal sheet is submitted herewith.

☒ The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment, to Deposit Account No. 500417, including any filing fees under 37 CFR 1.16 for presentation of extra claims and any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

Michael E. Fogarty
Registration No. 36,139

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 MEF:men
Facsimile: (202) 756-8087
Date: October 29, 2003

IN THE CLAIMS:

Please amend the claims as follows:

1. (Currently amended) A lens aberration monitor for detecting lens aberrations, said monitor comprising:

a mask for transferring a lithographic pattern onto a substrate, and

a plurality of ~~non-resolvable~~ sub-resolution features disposed on said mask, said plurality of ~~non-resolvable~~ sub-resolution features arranged so as to form a predetermined pattern on said substrate, said predetermined pattern being utilized to detect lens aberrations,

wherein none of said plurality of sub-resolution features are individually imaged on said substrate.

2. (Currently amended) The lens aberration monitor of claim 1, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features has a square-shaped cross-sectional configuration, said plurality of ~~non-resolvable~~ sub-resolution features being positioned with respect to one another so as to form a circular-shape.

3. (Currently amended) The lens aberration monitor of claim 2, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features having said square-shaped cross-sectional configuration, exhibits a length of about 0.30 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

4. (Currently amended) The lens aberration monitor of claim 2, wherein the spacing between adjacent edges of adjacent ~~non-resolvable~~ sub-resolution features is about 0.15 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

5. (Currently amended) The lens aberration monitor of claim 2, wherein a first set of said plurality of ~~non-resolvable~~ sub-resolution features which are adjacent one another overlap in an X-direction, and a second set of said plurality of ~~non-resolvable~~ sub-resolution features overlap in a Y-direction, substantially orthogonal to said X-direction, said overlap in said X-direction being equal to said overlap in said Y-direction.

6. (Currently amended) The lens aberration monitor of claim 1, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features is a π-phase shifting element.

7. (Original) The lens aberration monitor of claim 1, wherein said predetermined pattern formed on said substrate is a ring-shaped pattern.

8. (Original) The lens aberration monitor of claim 1, wherein said mask further comprises a lithographic pattern corresponding to an integrated circuit to be formed on said substrate.

9. (Original) The lens aberration monitor of claim 1, wherein said mask is a 6% attenuated phase-shift mask.

10. (Original) The lens aberration monitor of claim 1, wherein said mask is a binary chrome mask.

11. (Currently amended) A method of forming a lens aberration monitor for detecting lens aberrations, said method comprising the steps:

forming a mask for transferring a lithographic pattern onto a substrate, and

forming a plurality of ~~non-resolvable~~ sub-resolution features disposed on said mask, said plurality of ~~non-resolvable~~ sub-resolution features arranged so as to form a predetermined pattern on said substrate, said predetermined pattern being utilized to detect lens aberrations, wherein none of said plurality of sub-resolution features are individually imaged on said substrate.

12. (Currently amended) The method of forming the lens aberration monitor of claim 11, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features has a square-shaped cross-sectional configuration, said plurality of ~~non-resolvable~~ sub-resolution features being positioned with respect to one another so as to form a circular-shape.

13. (Currently amended) The method of forming the lens aberration monitor of claim 12, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features having said square-

shaped cross-sectional configuration, exhibits a length of about 0.30 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

14. (Currently amended) The method of forming the lens aberration monitor of claim 12, wherein the spacing between adjacent edges of adjacent ~~non-resolvable~~ sub-resolution features is about 0.15 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

15. (Currently amended) The method of forming the lens aberration monitor of claim 12, wherein a first set of said plurality of ~~non-resolvable~~ sub-resolution features which are adjacent one another overlap in an X-direction, and a second set of said plurality of ~~non-resolvable~~ sub-resolution features overlap in a Y-direction, substantially orthogonal to said X-direction, said overlap in said X-direction being equal to said overlap in said Y-direction.

16. (Currently amended) The method of forming the lens aberration monitor of claim 11, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features is a π-phase shifting element.

17. (Original) The method of forming the lens aberration monitor of claim 11, wherein said predetermined pattern formed on said substrate is a ring-shaped pattern.

18. (Original) The method of forming the lens aberration monitor of claim 11, wherein said mask further comprises a lithographic pattern corresponding to an integrated circuit to be formed on said substrate.

19. (Original) The method of forming the lens aberration monitor of claim 11, wherein said mask is a 6% attenuated phase-shift mask.

20. Original) The method of forming the lens aberration monitor of claim 11, wherein said mask is a binary chrome mask.

21. (Currently amended) A lens aberration monitor for detecting lens aberrations, said monitor comprising:

a mask for transferring a lithographic pattern onto a substrate,

a plurality of ~~non-resolvable~~ sub-resolution features disposed on said mask, said plurality of ~~non-resolvable~~ sub-resolution features arranged so as to form a predetermined pattern on said substrate, said predetermined pattern being utilized to detect lens aberrations, and

a lithographic pattern disposed on said mask, said lithographic corresponding to a device to be formed on said substrate,

wherein none of said plurality of sub-resolution features are individually imaged on said substrate.

22. (Currently amended) A method of detecting aberrations associated with a projection lens utilized in an optical lithography system, said method comprising the steps:

forming a mask for transferring a lithographic pattern onto a substrate,

forming a plurality of ~~non-resolvable~~ sub-resolution features disposed on said mask, said plurality of ~~non-resolvable~~ sub-resolution features arranged so as to form a predetermined pattern on said substrate,

exposing said mask using an optical exposure tool so as to print said mask on said substrate, and

analyzing the position of said predetermined pattern formed on said substrate and the position of said plurality of ~~non-resolvable~~ sub-resolution features disposed on said mask so as to determine if there is an aberration,

wherein none of said plurality of sub-resolution features are individually imaged on said substrate.

23. (Currently amended) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 22, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features has a square-shaped cross-sectional configuration, said plurality of ~~non-resolvable~~ sub-resolution features being positioned with respect to one another so as to form a circular-shape.

24. (Currently amended) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 23, wherein each of said

plurality of ~~non-resolvable~~ sub-resolution features having said square-shaped cross-sectional configuration, exhibits a length of about 0.30 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

25. (Currently amended) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 24, wherein the spacing between adjacent edges of adjacent ~~non-resolvable~~ sub-resolution features is about 0.15 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

26. (Original) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 22, wherein said predetermined pattern formed on said substrate is a ring-shaped pattern.

27. (Original) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 22, wherein said mask further comprises a lithographic pattern corresponding to a device to be formed on said substrate.

28. (Currently amended) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 23 ~~22~~, wherein a first set of said plurality of ~~non-resolvable~~ sub-resolution features which are adjacent one another overlap in an

X-direction, and a second set of said plurality of ~~non-resolvable~~ sub-resolution features overlap in a Y-direction, substantially orthogonal to said x-direction, said overlap in said X-direction being equal to said overlap in said Y-direction.

29. (Currently amended) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 22, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features is a π-phase shifting element.

30. (Original) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 22, wherein said mask is a 6% attenuated phase-shift mask.

31. (Original) The method of detecting aberrations associated with a projection lens utilized in an optical lithography system of claim 22, wherein said mask is a binary chrome mask.

32. (Currently amended) A device manufacturing method comprising the steps of:

(a) providing a substrate which is at least partially covered by a layer of radiation-sensitive material;

(b) providing a mask which contains a pattern;

(c) using a projection beam of radiation and an objective lens to project an image of at least part of the mask pattern onto a target area of the layer of radiation-sensitive material,

wherein prior to performing step (c), an aberration monitoring step is performed comprising the step of forming a plurality of ~~non-resolvable~~ sub-resolution features on said mask, said plurality of ~~non-resolvable~~ sub-resolution features arranged so as to form a predetermined pattern on said substrate, said predetermined pattern being utilized to detect lens aberrations, and

wherein none of said plurality of sub-resolution features are individually imaged on said substrate.

33. (Currently amended) The device manufacturing method of claim 32, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features has a square-shaped cross-sectional configuration, said plurality of ~~non-resolvable~~ sub-resolution features being positioned with respect to one another so as to form a circular-shape.

34. (Currently amended) The device manufacturing method of claim 33, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features having said square-shaped cross-sectional configuration, exhibits a length of about 0.30 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said mask and NA equals the numerical aperture of the objective lens used to image the mask onto the substrate.

35. (Currently amended) The device manufacturing method of claim 33, wherein the spacing between adjacent edges of adjacent ~~non-resolvable~~ sub-resolution features is about 0.15 (λ/NA) or less per side, where λ equals the wavelength of a light source utilized to image said

mask and NA equals the numerical aperture of an objective lens used to image the mask onto the substrate.

36. (Currently amended) The device manufacturing method of claim 33, wherein a first set of said plurality of ~~non-resolvable~~ sub-resolution features which are adjacent one another overlap in an X-direction, and a second set of said plurality of ~~non-resolvable~~ sub-resolution features overlap in a Y-direction, substantially orthogonal to said X-direction, said overlap in said X-direction being equal to said overlap in said Y-direction.

37. (Currently amended) The device manufacturing method of claim 32, wherein each of said plurality of ~~non-resolvable~~ sub-resolution features is a π-phase shifting element.

38. (Original) The device manufacturing method of claim 32, wherein said predetermined pattern formed on said substrate is a ring-shaped pattern.

39. (Original) The device manufacturing method of claim 32, wherein said pattern corresponds to an integrated circuit to be formed on said substrate.

40. (Original) The device manufacturing method of claim 32, wherein said mask is a 6% attenuated phase-shift mask.

41. (Original) The device manufacturing method of claim 32, wherein said mask is a binary chrome mask.

REMARKS

I. Introduction

In response to the pending Office Action, Applicants have amended claims 1-6, 1-16, 21-25, 28, 29 and 32-37 so as to further clarify the intended subject matter of the present invention. Specifically, the term "non-resolvable" has been changed to "sub-resolution". However, it is noted that the foregoing amendments are not deemed to be more limiting. The foregoing amendment is being made in an effort expedite prosecution.

Applicants note with appreciation the indication of allowable subject matter set forth in claims 3-5, 13-15, 24-25, and 34-36.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of The Claims Under 35 U.S.C. § 103

Claims 1-2, 6-12, 16-23, 26-33 and 37-41 were rejected under 35 U.S.C. §103 as being obvious over USP No. 6,296,977 to Kaise. Applicants respectfully traverse this rejection for at least the following reasons.

As recited by each of the independent claims pending in the current application, the method of detecting lens aberrations (or the corresponding device for performing this task) includes *forming a monitor comprising a plurality of sub-resolution features*, for example, on a mask, which when imaged, forms a predetermined test pattern on the substrate. This test pattern is then utilized to detect lens aberrations. The amended claims expressly state that ***none of the plurality of sub-resolution features are individually imaged on said substrate***. Indeed, this is

the well known meaning of the term "sub-resolution" (i.e., that by themselves, the size of each individual feature forming the monitor is sufficiently small such that the individual feature is not imaged on the substrate). In other words, each individual feature is below the resolution capabilities of the imaging device.

Importantly, by utilizing such sub-resolution features to form the aberration monitor, the present invention provides significant advantages over the prior art monitors. For example, as a result of utilizing such sub-resolution features, the size of the monitor can be sufficiently small so as to allow the monitor to be utilized for in-situ production monitoring. Furthermore, due to the minimal size, the monitor structures can be positioned in a sufficient number of positions in so as to allow for monitoring of the entire exposure field. In addition, the lens monitor is capable of detecting very subtle lens aberrations, and is substantially immune to deficiencies in the masking formation process utilized to form the monitor. Indeed, as noted in the specification, the lens monitor of the present invention is relatively insensitive to both of the "sloped" phase edges and the "corner rounding" effects that are inherent to mask making process. Each of the foregoing advantages associated with the present invention as discussed in more detail in the specification.

Turning to the cited prior art, it is clear that Kaise does not disclose or suggest forming a lens-aberration monitor having sub-resolution features. Kaise discloses a method of printing various line/space feature patterns and then measuring the width and pitch of the patterns printed on the wafer to determine aberrations. ***However, in contrast to the present invention, none of the features forming the line/space patterns disclosed in Kaise are sub-resolution.*** In other words, all of the lines in the line/space patterns are printed on the wafer. Kaise also discloses a method in which the line/space patterns are printed and then the amount of exposure is increased

until the lines with the smaller width disappear. However, even in this technique the lines are initially resolvable. This technique is illustrated in Figs. 1(a)-1(e) of Kaise and discussed in col. 17, lines 5-25.

Accordingly, as each and every limitation must be disclosed or suggested by the prior art to establish a *prima facie* case of obviousness (see, M.P.E.P. § 2143.03), and for at least the foregoing reasons Kaise fails to do so, it is respectfully submitted that all of the pending claims are patentable over Kaise.

Furthermore, it should be recognized that the fact that the prior art could be modified so as to result in the combination defined by the claims at bar would not have made the modification obvious unless the prior art suggests the desirability of the modification. ***In re Deminski***, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986).

Indeed, recognizing after the fact that such a modification would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness. ***In re Warner***, 379 F.2d 1011, 154, USPQ 173 (CCPA 1967).

It is only Applicants' invention that discloses a lens-aberration monitor comprising a plurality of sub-resolution elements. Kaise neither describes nor suggests such a feature. Moreover, Kaise does not even acknowledge the problems solved by the present invention. Thus, the only motivation of record for the proposed modification of the device of Kaise to arrive at the claimed invention is found in Applicants' disclosure which, of course, may not properly be

relied upon to support the ultimate legal conclusion of obviousness under 35 U.S.C. §103. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 227 1 USPQ2d 1593 (Fed. Cir. 1987).

For all of the foregoing reasons, it is respectfully submitted that all pending claims are patentable over Kaise.

III. All Dependent Claims Are Allowable Because The Independent Claims From Which They Depend Are Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as all independent claims are patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also in condition for allowance.

IV. Conclusion

Accordingly, it is urged that the application is in condition for allowance, an indication of which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT, WILL & EMERY

By:

Michael E. Fogarty
Registration No. 36,139

600 13th Street, N.W., Suite 1200
Washington, D.C. 20006-3096
Telephone: (202) 756-8000
Facsimile: (202) 756-8087